Editorial

Entrancing world of bioelectronics

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As a member of research and education fraternity, I Feel privileged and honored to get an opportunity to write an editorial opinion article for the prestigious International Journal of Biosensors and Bioelectronics (IJBSBE). I further take liberty to thank all the contributors of this journal i.e. author's, reviewer's, for their contribution in promoting the journal. With rising sedentary lifestyle, health concerns are increasing at an exponential rate. The fusion of techniques of electronics with biology and medicine is creating a revolution and promises better solutions in the field of medicine for the growing health concerns. In other words, the future of medical technology is bioelectronics. With the help of bioelectronic devices it is expected that in coming years, disorders as diverse as inflammatory bowel disease, arthritis, asthma, hypertension and diabetes could be treated. When we look at the human body we should conclude that all human body functions are controlled by the electrical system may it be information transfer in the central and autonomous nervous system, operation of the brain and spinal cord to critical pumping mechanism of heart. A futuristic Bioelectronic device will be an embedded implant for treatment of various diseases suggested above. This embedded Implant will be an electronic system fitted with a microcontroller, memory and electronic circuitry to generate electric pulses which are exact replica of pulses generated in human body. The implant will be battery powered and small in size. It can be implanted in to the human body with normal micro surgery. This embedded Implant will be able to generate and send correct or improved signals to the nervous system. The part of bodies which were not functioning properly in absence of correct signal or improper values of the signal will start proper functioning, resulting in immediate relief. This will become possible in near future and such implants exist, a pacemaker is an example of such implant. In case of failure of natural pacemaker (Sino-atrial Node) of heart, a pacemaker generates the electric pulses and correct the abnormal heart rhythms (arrhythmias) that can cause your heart to either beat too slowly or miss beats. Similar implants will be possible for various diseases may be there will be an implant for pancreas which will send signal to secrete proper amount of Insulin, an immediate cure to diabetes forever, maybe an implant for pituitary controlling secretion of proper quantity of hormones. Though these ideas are still infant in the eyes of technology and a lot of research, experimentation, analysis etc. are to be done, but in coming 10 years, all this will become reality and we will have such implants. Bioelectronics is the future and promises better prospects in various fields of biology and medicine.

International Journal of Biosensors & Bioelectronics (IJBSBE) is a worldwide peer reviewed journal devoted to design, research, development and application of biosensors and bioelectronics. It is an integrative journal serving professionals with an interest in the exploitation of biological materials in novel diagnostic and electronic devices. A biosensor is an analytical tool, used for the disclosure of an analytic that combines an organic component with a physicochemical detector. The emerging field of bioelectronics deals with the field of research that works to establish a synergism between electronics and biology. This journal invites research papers, review articles, short communications, case reports, mini-reviews, opinions, letter to editors etc. On all aspects of basic and clinical research in the fields of biosensors & bioelectronics and related subjects, with emphasis on matters of worldwide interest. The journal provides an open platform for dissemination of works and research of various scientists and researchers in the domain of advanced research in Biosensors & Bioelectronics and related fields. The journal publishes complete and reliable source of information submitted by some of the best authors. Biosensors & Bioelectronics journal ensures that all published article gains maximum visibility and impact. The Journal solicits from scholars, engineers, academicians, scientists, industrial professionals and researchers from all over the world to submit their unpublished original work for prospective publication in next issue. Please contribute articles to this journal in a timely manner, to ensure it gets published timely and becomes part of this important forum for the exchange of ideas and knowledge. If you have any questions or comments about the Journal please contact the Editor board at bsbe@medcraveonline.org, or bsbe@medcraveonline.us. The Journal is available online, please visit the following website: http://medcraveonline.com/IJBSBE/

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I have based this paper on the materials collected from several courses I've attended. Some of this information is also featured in various tutorials available online. In addition, I have also consulted several web pages while writing this article. I would also like to thank Mr. Amit Saxena and Ms. Deepti Shinghal for their valuable support, without their help this article would have been impossible to complete.

Conflict of interest

None.